

# Close doublet structures in $^{103}\text{Mo}$ , $^{109,111}\text{Ru}$ , and neighbours: rotation alignment for the half-filled $\text{h}_{11/2}$ subshell?\*

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Several new gamma transitions are assigned to  $^{103}\text{Mo}$  and  $^{109,111}\text{Ru}$  in a gamma-gamma-gamma coincidence study from the spontaneous fission of  $^{252}\text{Cf}$  with 72 Compton suppressed Ge detectors in Gammasphere. A close doublet structure of an odd-parity band except near its bandhead is a common feature not only of the nuclei studied here but of many others with  $61 \leq N \leq 67$ . This doublet structure may be a general consequence of rotation alignment for configurations of half-filled  $j$ -shells, which are only weakly coupled to the deformed shapes.

## *Footnotes and References*

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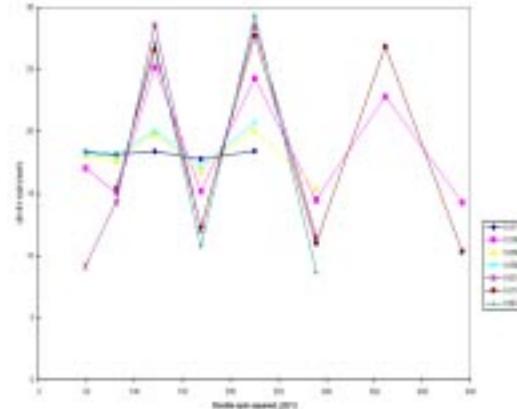


Fig. 1 Plot of rotational constant in odd-Z even-parity bands ( $g9/2$ ). Note the large increase of signature splitting with increasing mass number.